



# SBA520AF / SBA530AF / SBA540AF

## EXTREME LOW VF SCHOTTKY RECTIFIER

<b>Voltage</b>	<b>20-40 V</b>	<b>Current</b>	<b>5 A</b>
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### Features

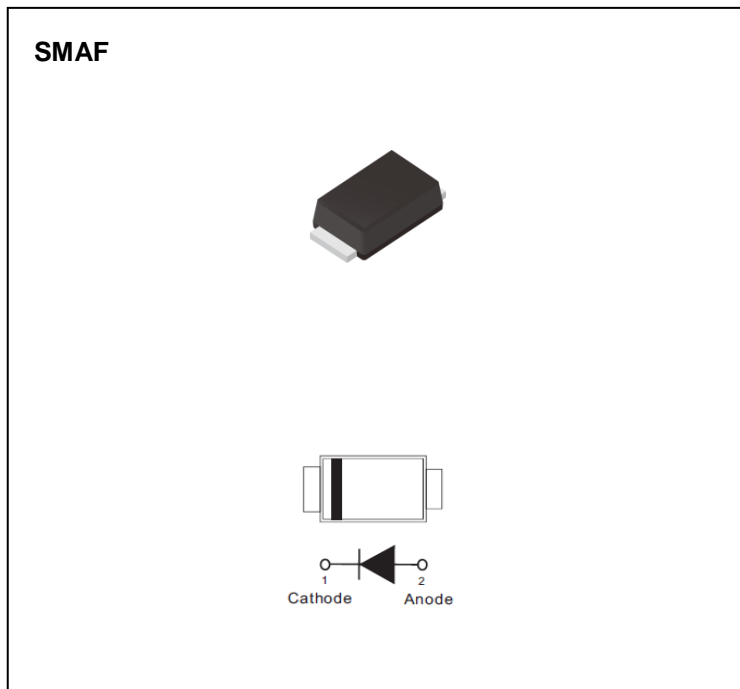
- Ultra low forward voltage drop, low power loss
- Fast switching speed
- Surface mount package
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

### Applications

- Low voltage rectification
- Reverse polarity protection
- Low power consumption applications

### Mechanical Data

- Case: Molded plastic, SMAF
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0012 ounces, 0.0328 grams



### Maximum Ratings (T<sub>A</sub> = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	SBA520AF	SBA530AF	SBA540AF	UNIT
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	20	30	40	V
Maximum rms voltage	V <sub>RMS</sub>	14	21	28	V
Maximum dc blocking voltage	V <sub>R</sub>	20	30	40	V
Maximum average forward rectified current	I <sub>F(AV)</sub>	5			A
Peak forward surge current: 8.3ms single half sine-wave Superimposed on rated load	I <sub>FSM</sub>	80			A
Typical thermal resistance	R <sub>θJC</sub> <sup>(2)</sup>	15			°C/W
	R <sub>θJA</sub> <sup>(1)</sup>	150			
Operating junction temperature range	T <sub>J</sub>	-55 to +150			°C
Storage temperature range	T <sub>STG</sub>	-55 to +150			°C

### Electrical Characteristics

PARAMETER	SYMBOL	TEST CONDITION	SBA520AF		SBA530AF		SBA540AF		UNIT
			TYP.	MAX.	TYP.	MAX.	TYP.	MAX.	
Forward voltage	V <sub>F</sub>	I <sub>F</sub> = 10mA	0.17	-	0.17	-	0.17	-	V
		I <sub>F</sub> = 2A	0.34	-	0.35	-	0.36	-	
		I <sub>F</sub> = 5A	-	0.45	-	0.46	-	0.49	
		T <sub>J</sub> = 25 °C							
Reverse current	I <sub>R</sub> <sup>(3)</sup>	I <sub>F</sub> = 10mA	0.04	-	0.04	-	0.05	-	μA
		I <sub>F</sub> = 2A	0.25	-	0.27	-	0.29	-	
		T <sub>J</sub> = 125 °C							
		V <sub>R</sub> = 10V	47	-	33	-	25	-	mA
V <sub>R</sub> = 20V	-	300	51	-	32	-			
V <sub>R</sub> = 30V	-	-	-	300	55	-			
V <sub>R</sub> = 40V	-	-	-	-	-	250			
Reverse current	I <sub>R</sub> <sup>(3)</sup>	V <sub>R</sub> = 20V	21	-	11	-	8	-	mA
		V <sub>R</sub> = 30V	-	-	19	-	12	-	
		V <sub>R</sub> = 40V	-	-	-	-	19	-	
		T <sub>J</sub> = 125 °C							

- Note : 1. Mounted on a FR4 PCB, single-sided copper, mini pad.  
 2. Mounted on a FR4 PCB, single-sided copper, with 100cm<sup>2</sup> copper pad area  
 3. Short duration pulse test used to minimize self-heating effect.



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## TYPICAL CHARACTERISTIC CURVES

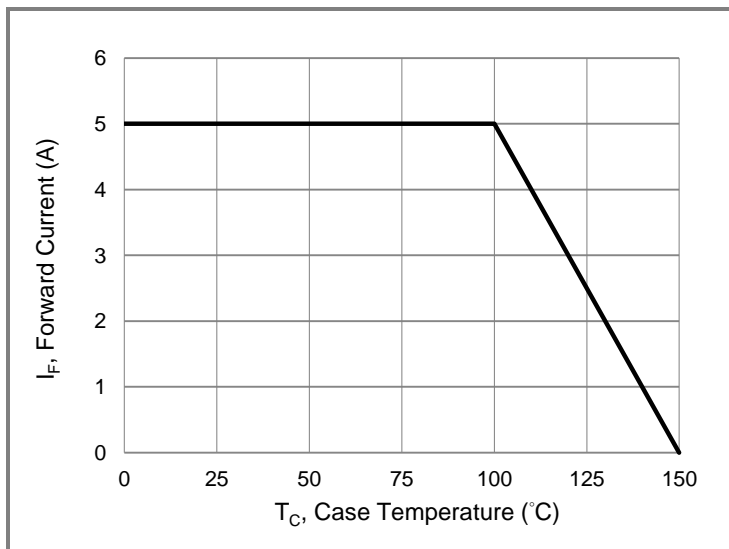


Fig.1 Forward Current Derating Curve

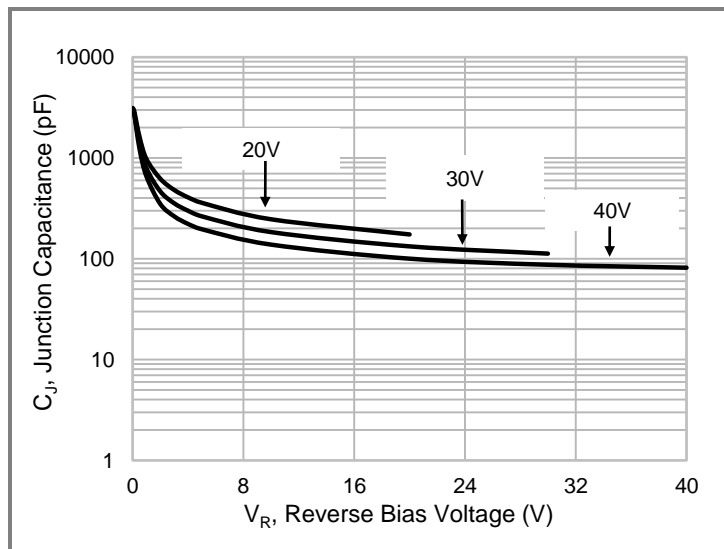


Fig. 2 Typical Junction Capacitance

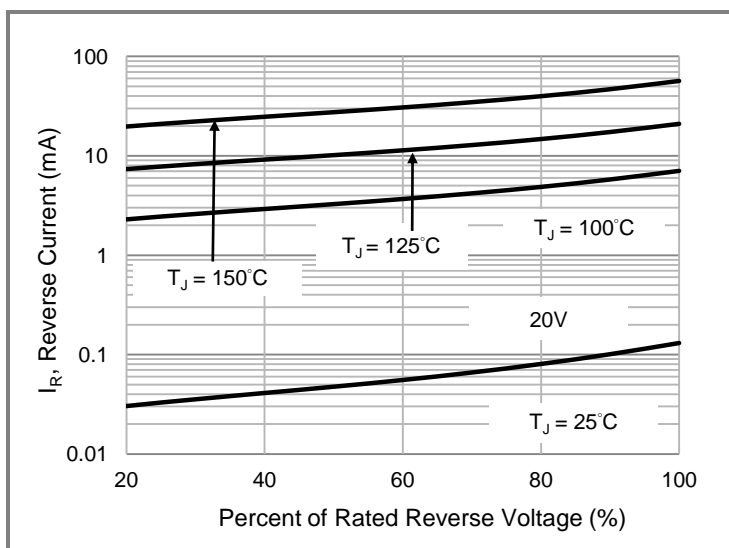


Fig.3 Typical Reverse Characteristics

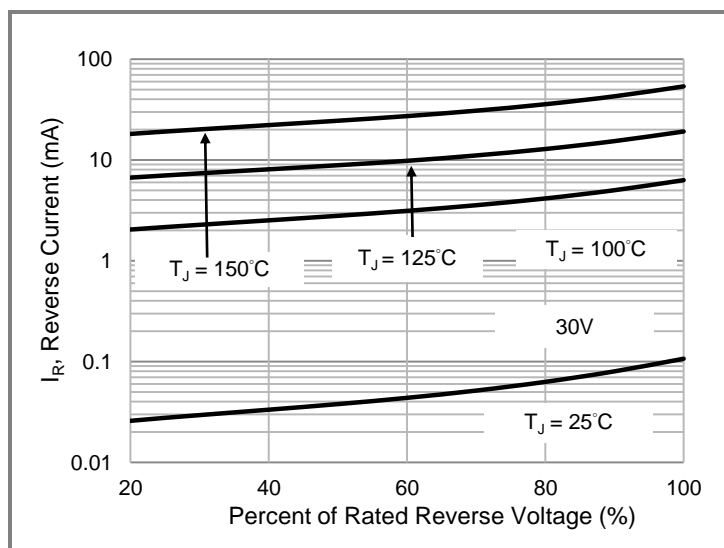


Fig.4 Typical Reverse Characteristics

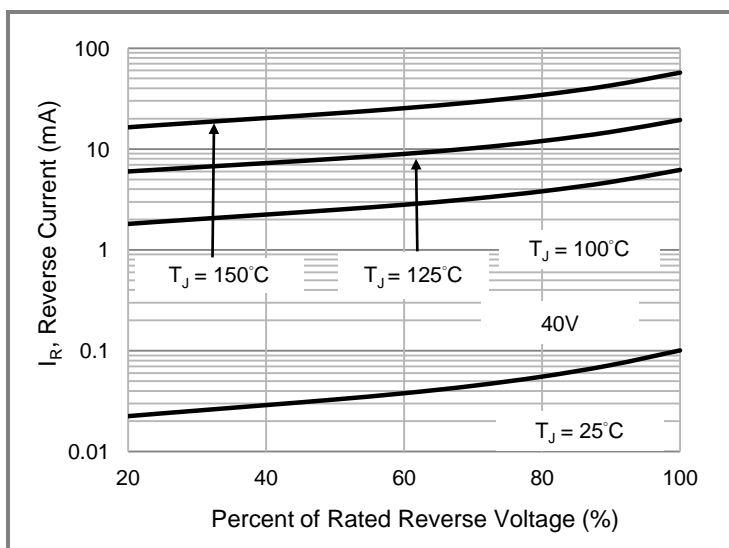


Fig.5 Typical Forward Characteristics

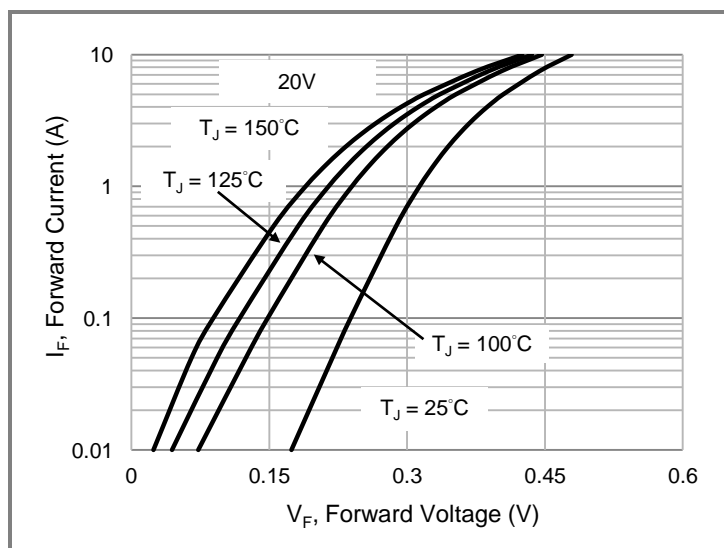


Fig.6 Typical Forward Characteristics



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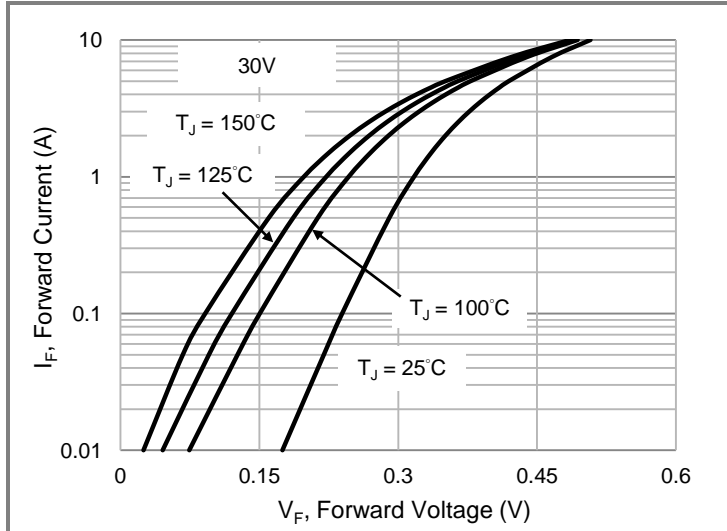


Fig.7 Typical Forward Characteristics

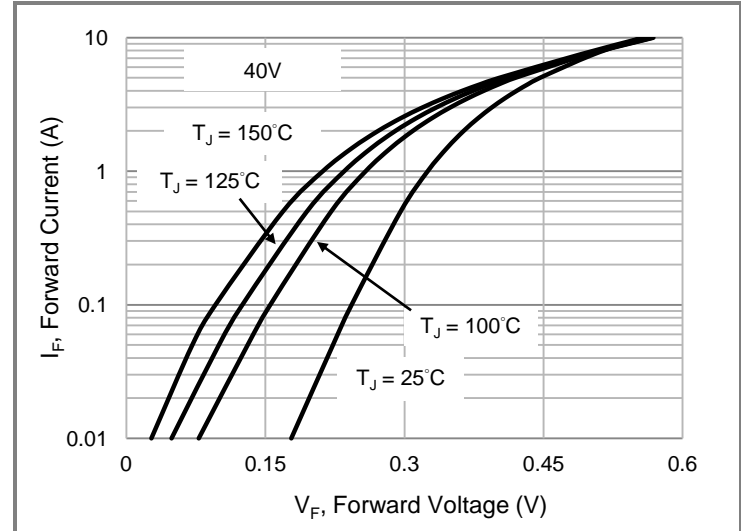


Fig.8 Typical Forward Characteristics

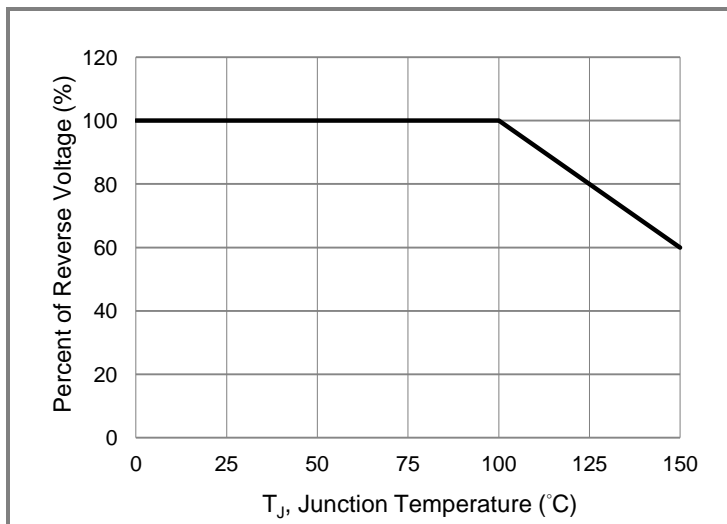


Fig.9 Operating Temperature Derating Curve

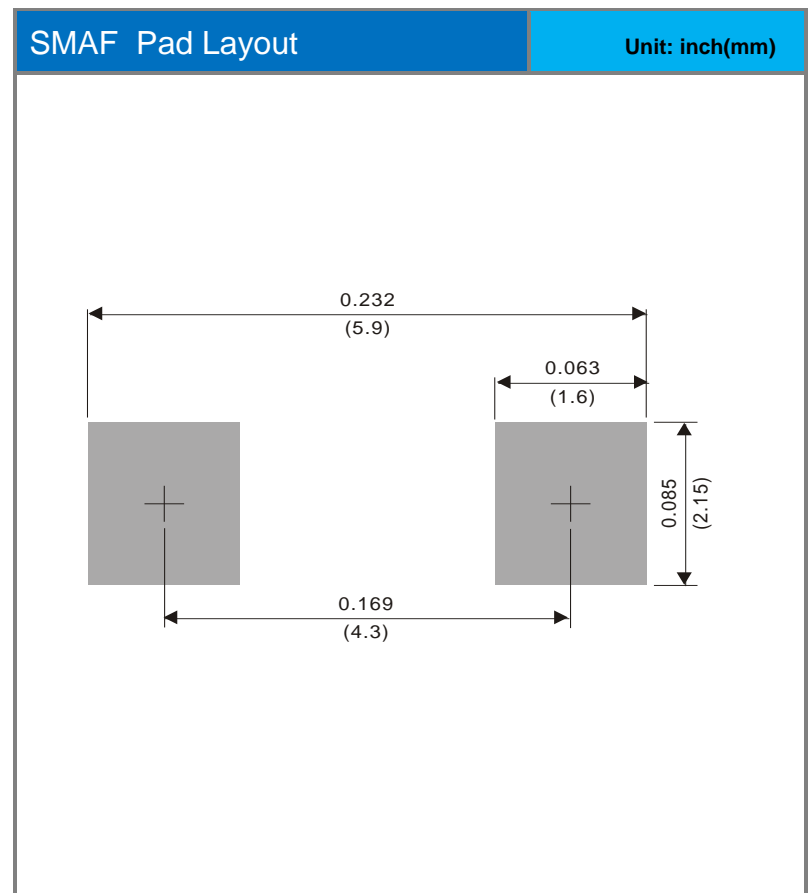
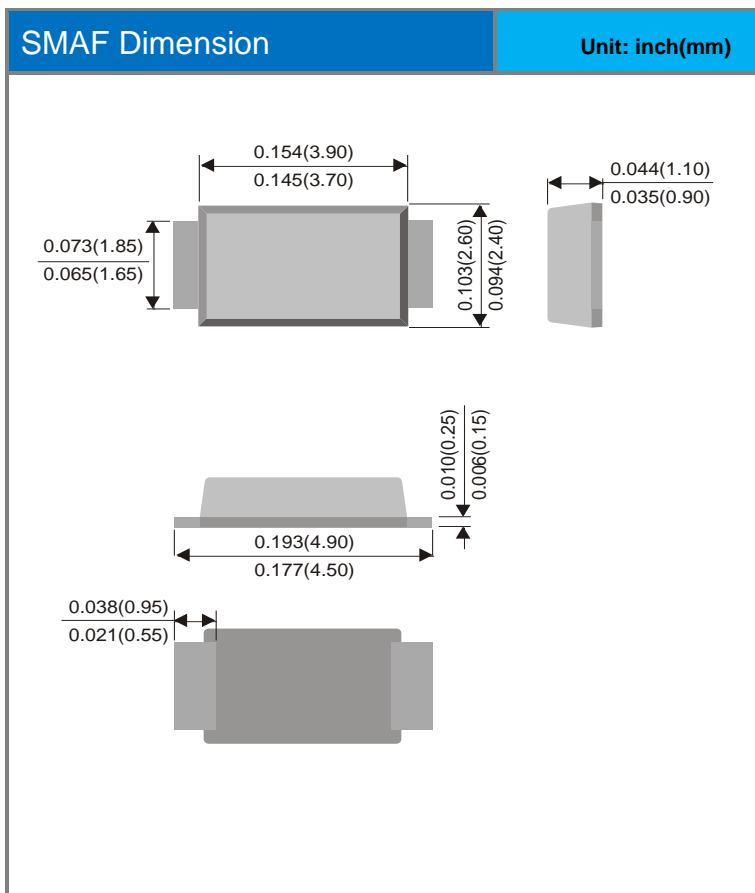


# SBA520AF / SBA530AF / SBA540AF

## Part No Packing Code Version

Part No Packing Code	Package Type	Packing Type	Marking	Version
SBA520AF_R1_00001	SMAF	3K pcs / 7" reel	SBA520AF	Halogen free
SBA530AF_R1_00001	SMAF	3K pcs / 7" reel	SBA530AF	Halogen free
SBA540AF_R1_00001	SMAF	3K pcs / 7" reel	SBA540AF	Halogen free

## Packaging Information & Mounting Pad Layout





## SBA520AF / SBA530AF / SBA540AF

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